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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,391	04/30/2001	Robert G. Gann	10014423-1	2734

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EXAMINER	
HANNETT, JAMES M	
ART UNIT	**PAPER NUMBER**
2612	5

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

[redacted]

Office Action Summary	Application No.	Applicant(s)	
	09/845,391	GANN ET AL.	
	Examiner	**Art Unit**	
	James M Hannett	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 April 2001_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-9_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-9_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 April 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _4_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1: Claims 1-4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,570,615 Decker et al in view of USPN 5,025,282 Nakamura et al.

2: As for Claim 1, Decker et al teaches on Column 4, Lines 41-67 and Column 5, Lines 1-17 and depicts in Figure 2 a photosensor assembly, comprising: a plurality of sets of lines of photosensors, each set comprising at least a first line and a second line, where photosensors in the first line and the second line have substantially the same pitch, and where photosensors in the first line are offset relative to photosensors in the second line by approximately one-half the pitch. Decker et al depicts six lines of pixels wherein the six lines of pixels comprise three groups of pixels each group having a first and second line of data that are offset from each other. However, Decker et al teaches that the six lines of photosensors comprise two lines of red, green, and blue photosensors and does not teach that the six lines of photosensors can all have different spectral bandwidths or colors.

Nakamura et al teaches on Column 7, Lines 8-17 and depicts in Figure 1 and 2 that when designing a color scanner that uses six lines of photosensors, that it is advantageous that the six photosensors have six different sensitivities corresponding to two red, two green, and two blue sensitivities. Nakamura et al teaches that it is advantageous to use two sets of RGB colors

having different peak color sensitivities in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the six lines of photosensors in the scanner of Decker et al to have six different spectral sensitivities as taught by Nakamura et al in order to allow a scanner to distinguish between color photographic originals and color printed originals.

3: In regards to Claim 2, Decker et al teaches 6 lines of photosensors, where N is at least six, each photosensor in one of the 6 lines receives a different spectral bandwidth of light than photosensors in the other 5 lines.

4: As for Claim 3, Decker et al teaches on Column 4, Lines 41-67 and Column 5, Lines 1-17 and depicts in Figure 2 a photosensor assembly, comprising: a plurality of sets of lines of photosensors, each set comprising at least a first line and a second line, where photosensors in the first line and the second line have substantially the same photosensor width. The examiner views that photosensors as depicted in Figure 2 indicate that the photosensors have substantially the same width. Decker et al teaches the photosensors in the first line are offset relative to photosensors in the second line by approximately one-half the photosensor width, However, Decker et al teaches that the six lines of photosensors comprise two lines of red, green, and blue photosensors and does not teach that the six lines of photosensors can all have different spectral bandwidths or colors.

Nakamura et al teaches on Column 7, Lines 8-17 and depicts in Figure 1 and 2 that when designing a color scanner that uses six lines of photosensors, that it is advantageous that the six photosensors have six different sensitivities corresponding to two red, two green, and two blue

sensitivities. Nakamura et al teaches that it is advantageous to use two sets of RGB colors having different peak color sensitivities in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the six lines of photosensors in the scanner of Decker et al to have six different spectral sensitivities as taught by Nakamura et al in order to allow a scanner to distinguish between color photographic originals and color printed originals.

5: In regards to Claim 4, Decker et al teaches 6 lines of photosensors, where N is at least six, each photosensor in one of the 6 lines receives a different spectral bandwidth of light than photosensors in the other 5-1 lines.

6: In regards to Claim 6, Decker et al teaches on Column 4, Lines 41-67 and Column 5, Lines 1-17 and depicts in Figure 2 A method of scanning, comprising: scanning an area with 6 photosensors, where N is six, where each photosensor has a corresponding photosensor that is spatially offset by substantially one-half a pitch of the photosensors, Decker et al teaches obtaining bits of intensity data from each photosensor by use of an ADC (110); and combining the intensity data to obtain M times N bits of intensity data for the area. Decker et al teaches that each photosensor is input into an ADC that converts the analog signal into a digital bit representation. Decker et al does not specifically state the bit data format for the output of the ADC however, it is inherent that it produce and arbitrary M Bits of data. Furthermore, the data is combined in that the output is the bit representation of all the photosensors. Therefore, there are M bits times N lines of data. However, Decker et al teaches that the six lines of photosensors

comprise two lines of red, green, and blue photosensors and does not teach that the six lines of photosensors can all have different spectral bandwidths or colors.

Nakamura et al teaches on Column 7, Lines 8-17 and depicts in Figure 1 and 2 that when designing a color scanner that uses six lines of photosensors, that it is advantageous that the six photosensors have six different sensitivities corresponding to two red, two green, and two blue sensitivities. Nakamura et al teaches that it is advantageous to use two sets of RGB colors having different peak color sensitivities in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the six lines of photosensors in the scanner of Decker et al to have six different spectral sensitivities as taught by Nakamura et al in order to allow a scanner to distinguish between color photographic originals and color printed originals.

7: As for Claim 7, Official notice is taken that it was well known in the art at the time the invention was made to enable imaging systems to perform line thinning operations that reduce image data from an image sensor of a given number of lines by ½ in order to perform a line thinning technique.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the image scanning system of Decker et al to perform line thinning operations that reduce image data from an image sensor of a given number of lines by ½ in order to perform a line thinning technique.

8: Claims 5, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,570,615 Decker et al in view of USPN 5,025,282 Nakamura et al in further view of USPN 5,652,664 Kusaka et al.

9: As for Claim 5, Decker et al teaches on Column 4, Lines 41-67 and Column 5, Lines 1-17 and depicts in Figure 2 a photosensor assembly, comprising: 3 first lines of photosensors having a first size; 3 second lines of photosensors having a second size; where, within each line of photosensors, essentially all photosensors receive the same spectral bandwidth of light; However, Decker et al teaches that the six lines of photosensors comprise two lines of red, green, and blue photosensors and does not teach that the six lines of photosensors can all have different spectral bandwidths or colors.

Nakamura et al teaches on Column 7, Lines 8-17 and depicts in Figure 1 and 2 that when designing a color scanner that uses six lines of photosensors, that it is advantageous that the six photosensors have six different sensitivities corresponding to two red, two green, and two blue sensitivities. Nakamura et al teaches that it is advantageous to use two sets of RGB colors having different peak color sensitivities in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the six lines of photosensors in the scanner of Decker et al to have six different spectral sensitivities as taught by Nakamura et al in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Decker et al in view of Nakamura et al does not teach that the photosensors in the second rows are a different size that the photosensors in the first rows.

Kusaka et al teaches in Figure 4 and on Column 6, Lines 8-50 that it is advantageous when designing an image scanner to allow for two rows of photosensors wherein the first row has a different pixel size than the second row. Kusaka et al teaches that this is advantageous because the use of two sizes of pixels increases image quality by increasing the signal to noise ratio and better enables the imaging system to obtain a properly focused image in both low light and high brightness conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the second rows of the red, green, and blue photosensors of Decker et al in view of Nakamura et al to have a different pixel size than the pixels in the preceding row as taught by Kusaka et al in order to increase image quality and better enable the imaging system to obtain a properly focused image in both low light and high brightness conditions.

10: In regards to Claim 8, Decker et al teaches on Column 4, Lines 41-67 and Column 5, Lines 1-17 and depicts in Figure 2 a photosensor assembly, comprising: 3 first lines of photosensors having a first size; 3 second lines of photosensors having a second size; where, within each line of photosensors, essentially all photosensors receive the same spectral bandwidth of light; Decker et al teaches obtaining bits of intensity data from each photosensor by use of an ADC (110); and combining the intensity data to obtain M times N bits of intensity data for the area. Decker et al teaches that each photosensor is input into an ADC that converts the analog signal into a digital bit representation. Decker et al does not specifically state the bit data format for the output of the ADC however, it is inherent that it produce and arbitrary M Bits of data. Furthermore, the data is combined in that the output is the bit representation of all the photosensors. Therefore, there are M bits times N lines of data. However, Decker et al teaches

that the six lines of photosensors comprise two lines of red, green, and blue photosensors and does not teach that the six lines of photosensors can all have different spectral bandwidths or colors.

Nakamura et al teaches on Column 7, Lines 8-17 and depicts in Figure 1 and 2 that when designing a color scanner that uses six lines of photosensors, that it is advantageous that the six photosensors have six different sensitivities corresponding to two red, two green, and two blue sensitivities. Nakamura et al teaches that it is advantageous to use two sets of RGB colors having different peak color sensitivities in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the six lines of photosensors in the scanner of Decker et al to have six different spectral sensitivities as taught by Nakamura et al in order to allow a scanner to distinguish between color photographic originals and color printed originals.

Decker et al in view of Nakamura et al does not teach that the photosensors in the second rows are a different size that the photosensors in the first rows.

Kusaka et al teaches in Figure 4 and on Column 6, Lines 8-50 that it is advantageous when designing an image scanner to allow for two rows of photosensors wherein the first row has a different pixel size than the second row. Kusaka et al teaches that this is advantageous because the use of two sizes of pixels increases image quality by increasing the signal to noise ratio and better enables the imaging system to obtain a properly focused image in both low light and high brightness conditions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the second rows of the red, green, and blue photosensors of Decker et al in view of Nakamura et al to have a different pixel size than the pixels in the preceding row as taught by Kusaka et al in order to increase image quality and better enable the imaging system to obtain a properly focused image in both low light and high brightness conditions.

11: As for Claim 9, Official notice is taken that it was well known in the art at the time the invention was made to enable imaging systems to perform line thinning operations that reduce image data from an image sensor of a given number of lines by ½ in order to perform a line thinning technique.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the image scanning system of Decker et al to perform line thinning operations that reduce image data from an image sensor of a given number of lines by ½ in order to perform a line thinning technique.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,507,011 Ang see figure 4; USPN 5,602,391 Pines et al see Figure 1; USPN 5,055,921 Usui teaches the use of having pixels with different sizes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James M. Hannett
Examiner
Art Unit 2612

JMH
August 12, 2004

NGOC-YEN VU
PRIMARY EXAMINER